



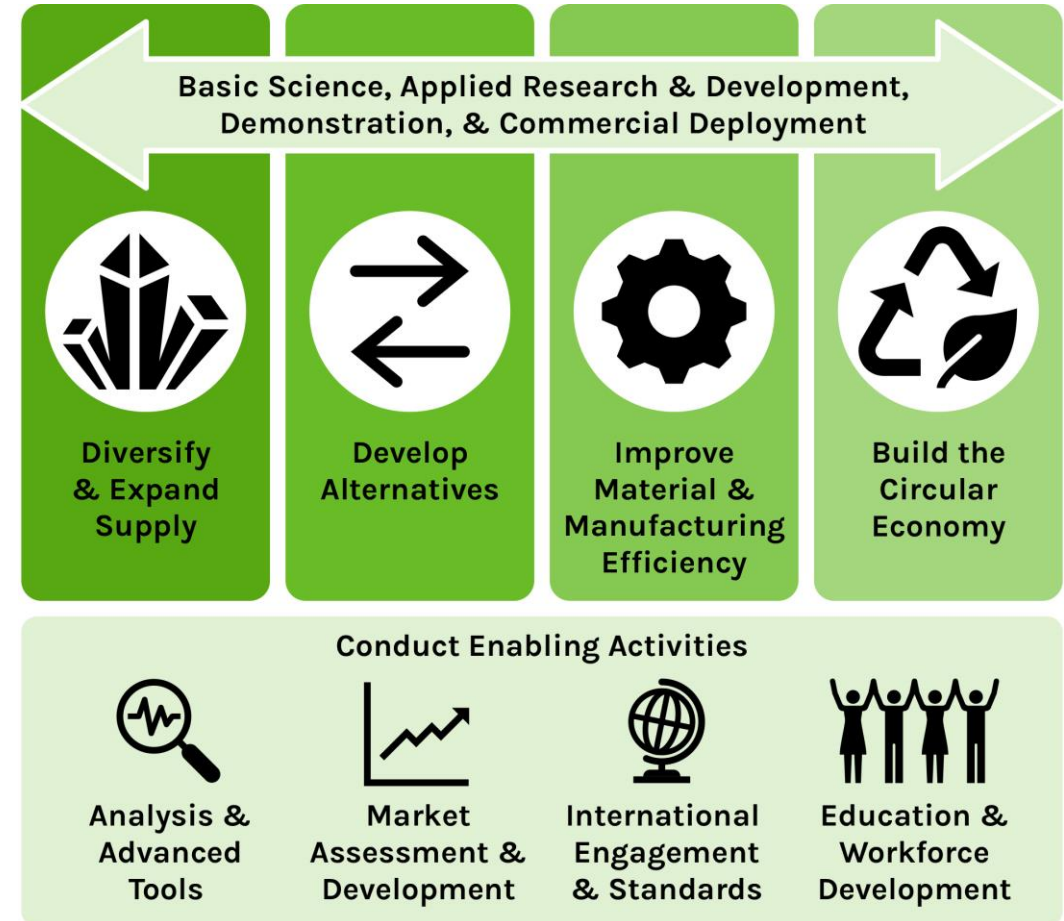
# Critical Materials Collaborative

**Forming Connections Across the Critical Materials Innovation Ecosystem**

## Vision:

- Build reliable, resilient, affordable, diverse, sustainable, and secure **domestic critical mineral and materials supply chains**.
- Support the clean energy transition and decarbonization of the energy, manufacturing, and transportation economies.
- Promote safe, sustainable, economic, and environmentally just solutions to meet current and future needs.

## CMM Strategies:



<https://www.energy.gov/critical-minerals-materials>

# The “Electric Eighteen”

## Critical Materials are Vital to the Energy Transition, Climate Goals, and US Competitiveness

Neodymium, Praseodymium,  
Dysprosium, & Terbium



**Magnets** for wind turbine generators  
& EV motors

Cobalt, Lithium, Graphite,  
Nickel & Fluorine



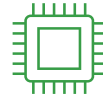
**Batteries** for electric vehicles & grid storage

Iridium & Platinum



**Electrolyzers** for green hydrogen production  
& **fuel cells** used energy storage

Gallium & Silicon Carbide\*



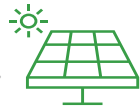
**Semiconductors** enable high voltage power  
& efficient lighting

Magnesium & Aluminum



**Lightweight alloys** in transportation

Silicon\*



**Solar panels**, lightweight alloys,  
electrical steel

Copper\* & Electrical Steel\*



Wind turbine **generators** & EV **motors**

### **Goals**

- **100% clean electricity by 2035**
- **Net-zero economy by 2050**
- **50% EV adoption by 2030**
- **30 GW offshore wind by 2030**
- **Cost of Clean Hydrogen \$1/kg by 2031**

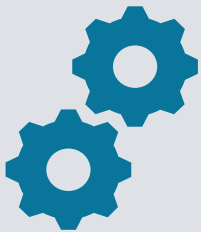
*\*Not on the U.S. Geological Survey Critical Minerals List*



- Increase domestic supply to combat climate change and address national security needs
- Respond to challenges and opportunities
- Reduce vulnerabilities in our supply chains



- Increase efficiency and circularity
- Decrease environmental and health impacts



- Connect innovation solutions to realize real-world impact

# What is the CMC?



**A new mode of connection** created by the U.S. Department of Energy (DOE) to increase communication and coordination between the U.S. government and the research communities working on critical materials projects.



**Creates partnerships** with industry, academia, national labs, and others to expand access to world-class expertise, capabilities, and facilities as part of a growing ecosystem.



**Accelerates the commercialization and deployment** of innovative solutions to develop globally competitive, environmentally responsible, and sustainable critical material supply chains.

The CMC connects DOE's diverse critical minerals and materials portfolio with industry and beyond, funding and supporting real-world innovation through each stage of the RD&D pipeline.

# Why a Collaborative?

**2010**

DOE completed its **first Critical Materials Strategy**, building off decades of basic materials research and catalyzing 10+ years of basic and applied critical materials research, development, demonstration, and deployment (RD&D) at every stage in the supply chain.

**2013**

The **Critical Materials Innovation Hub (CMI)\***, was formed, which has been addressing critical materials challenges for a decade.

*\*formerly known as the Critical Materials Institute*

**2020**

The Energy Act of 2020 authorized the DOE Critical Materials Program to **expand critical materials work** to include RDD&D and to create a **Critical Materials Consortium** to be a centralized entity for multidisciplinary, collaborative critical materials research and development.

**2021**

The Bipartisan Infrastructure Law and the Inflation Reduction Act supercharged DOE's efforts **by investing more than \$8 billion toward critical materials projects.**

**2023**

**DOE created the CMC** to align RD&D across the federal government, industry, and the research community, connecting innovation to basic science discovery and commercialization.



# CMC Mission

**Critical materials are vital to the clean energy transition.**

**The CMC is the connective tissue within the DOE Critical Materials Program and the U.S. government that aligns our applied RD&D portfolio with DOE climate goals and accelerates adoption of innovative solutions.**



Building a robust **innovation ecosystem**



**Training the critical materials leaders** and workforce across multiple sectors



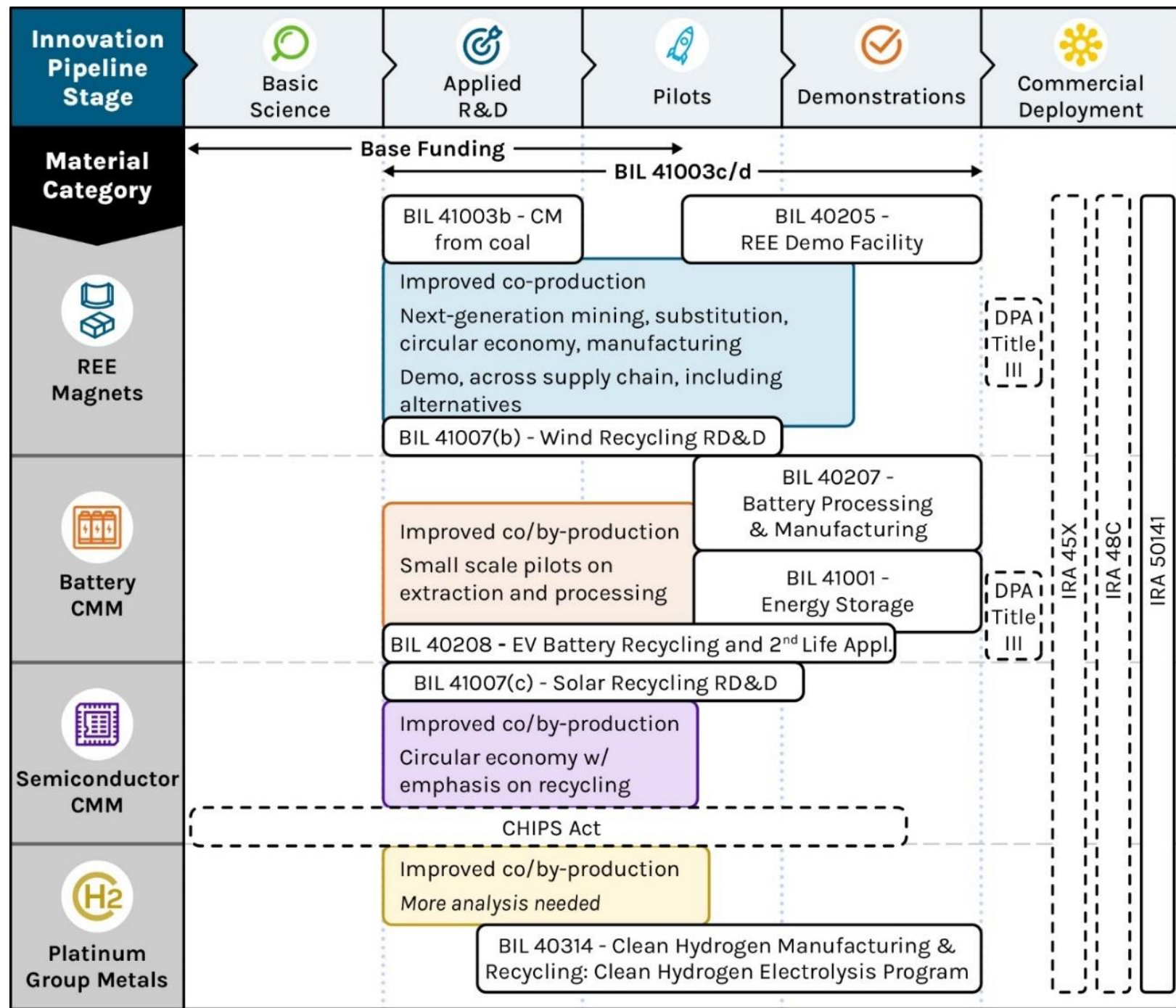
Enabling **industry adoption** of novel, cutting-edge technology



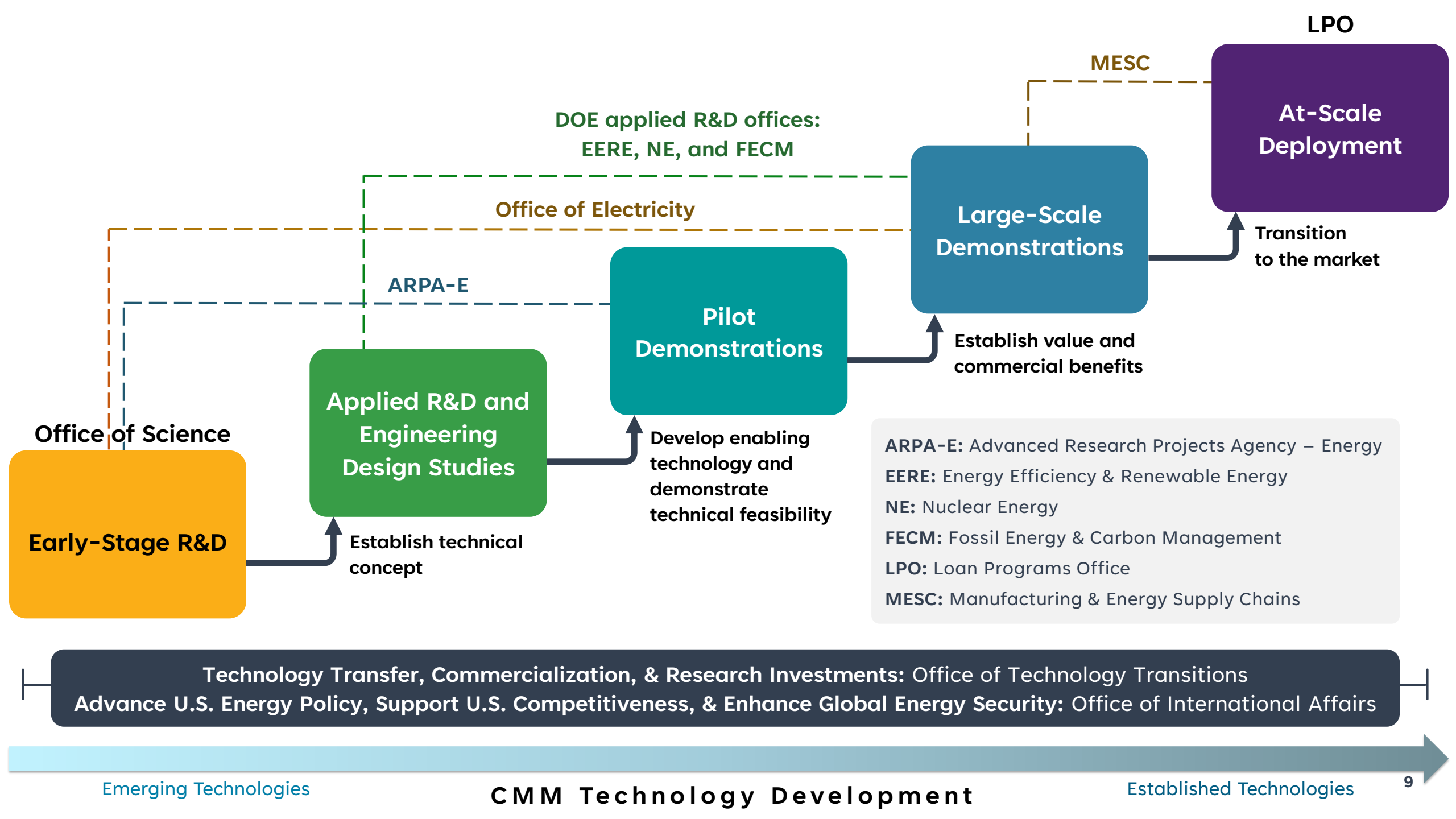
Laying the **scientific and technological groundwork** needed to address emerging challenges

# CMC: A Powerful Connector

The CMC connects DOE's diverse critical minerals and materials portfolio with industry and beyond, funding and supporting real-world innovation through each stage of the RD&D spectrum.









**OP**  
Office of Policy

**MESC**  
Office of Manufacturing and Energy Supply Chains

**NE**  
Office of Nuclear Energy

**SETO**  
Solar Energy Technologies Office

**OTT**  
Office of Technology Transitions

**HFTO**  
Hydrogen & Fuel Cell Technologies Office

**ORS**  
Office of Resource Sustainability

**FECM**  
Office of Fossil Energy and Carbon Management  
**Grant Bromhal**

**EERE**  
Office of Energy Efficiency and Renewable Energy  
**Helena Khazdozian**

**AMMTO**  
Advanced Materials & Manufacturing Technologies Office

**OCM**  
Office of Carbon Management

**VTO**  
Vehicle Technologies Office

**LPO**  
Loan Programs Office

**WETO**  
Wind Energy Technologies Office

**OE**  
Office of Electricity

**ARPA-E**  
Advanced Research Projects Agency-Energy

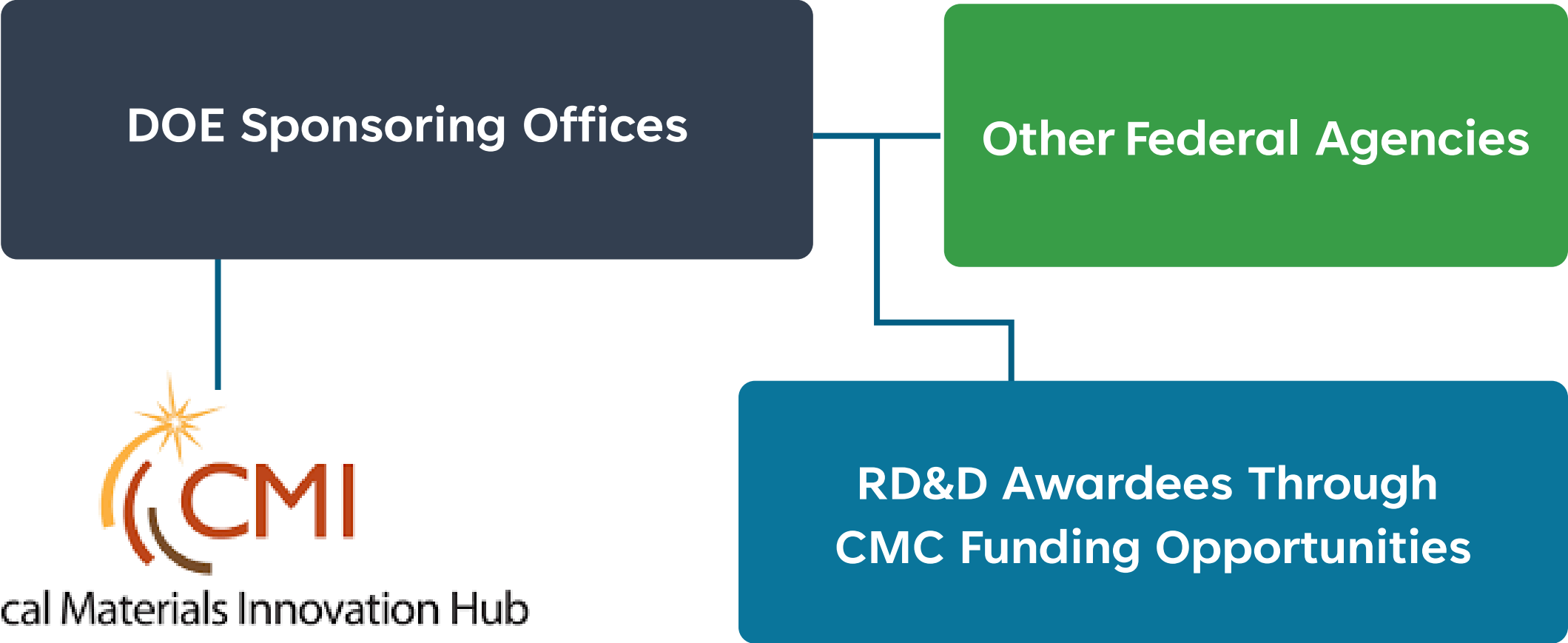
**IA**  
Office of International Affairs

**SC**  
Office of Science

**GTO**  
Geothermal Technologies Office

**CMC Co-Chairs**

# Member Structure



# Funding Opportunities

The CMC has already started to coordinate RD&D programs and funding opportunities across DOE, engaging the membership and supporting investments across the entire innovation pipeline.

These investments represent the first of many DOE programs to be coordinated through the CMC.

FECM's [FOA](#) for three projects supporting the design and construction of facilities that produce rare earth elements and other critical minerals and materials from coal-based resources.

FECM's [Critical Materials FOA](#) to advance cost-effective, environmentally responsible processes to produce and refine critical minerals and materials in the U.S.

FECM's [FOA](#) for a rare earth element demonstration facility to bring critical mineral supply chains to the U.S. and reduce reliance on competitors.

EERE's [Critical Materials Accelerator Program](#) to prototype and mature new materials, technologies, and processes that address critical materials challenges.

EERE's [E-SCRAP Prize](#) to substantially increase the production and use of critical materials recovered from electronic scrap.

A [joint FOA](#) between AMMTO and the Geothermal Technologies Office on researching alternative ways to extract lithium.

FECM's [FOA](#) supporting advanced processing of critical minerals and materials for industrial and manufacturing applications.

EERE's [Wind Turbine Materials Recycling Prize](#) to develop cost-effective and sustainable recycling industry for fiber-reinforced composites and rare earth elements in wind turbines.

FECM's [CORE-CM Initiative FOA](#) to develop regional partnerships supporting the domestic production of critical minerals and materials.

Not all CMC funding opportunities are shown here. View additional funding opportunities [at our website](#).

# Get Connected



## Become an RD&D Awardee

Join the CMC by being funded through a CMC-coordinated opportunity. Funding opportunities will be continually announced on the CMC website.



## Subscribe to the Quarterly Newsletter

[Join our newsletter list](#) to stay in the know on all-things CMC, new funding opportunities, engagement activities, events, resources, and more.



## Reach Out

Email: [cmc@hq.doe.gov](mailto:cmc@hq.doe.gov)

Website: [energy.gov/cmm/critical-materials-collaborative](https://energy.gov/cmm/critical-materials-collaborative)



# CRITICAL MATERIALS COLLABORATIVE

U.S. DEPARTMENT OF ENERGY

[www.energy.gov/cmm/critical-materials-collaborative](http://www.energy.gov/cmm/critical-materials-collaborative)

[cmc@hq.doe.gov](mailto:cmc@hq.doe.gov)